WHAT IS CLAIMED IS:

1. A magnetoresistance effect element, comprising:

a nonmagnetic spacer layer,

first and second ferromagnetic layers separated by the nonmagnetic spacer layer, the first ferromagnetic layer having a magnetization direction at an angle relative to a magnetization direction of the second ferromagnetic layer at zero applied magnetic field, the second ferromagnetic layer comprising first and second ferromagnetic films antiferromagnetically coupled to one another and an antiferromagnetically coupling film located between and in contact with the first and second ferromagnetic films for coupling the first and second ferromagnetic films together antiferromagnetically so that their magnetizations are aligned and remain antiparallel with one another in the presence of a magnetic field signal, the magnetization of the first ferromagnetic layer being freely rotatable in response to the magnetic field signal; and

a nonmagnetic high-conductivity layer disposed in contact with the first ferromagnetic layer so that the first ferromagnetic layer is disposed between the nonmagnetic spacer layer and the nonmagnetic high-conductivity layer.

2. The magnetoresistance effect element of claim 1, wherein the first ferromagnetic layer has a film thickness between 0.5 nanometers and 4.5 nanometers.

3. The magnetoresistance effect element of claim 1, wherein the first ferromagnetic layer has a film thickness between a mean free path for conduction electrons having spin antiparallel to the magnetization direction of the first ferromagnetic layer and a mean free path for conduction electrons having spin parallel to the magnetization direction of the first ferromagnetic layer.

4. The magnetoresistance effect element of claim 1, wherein the nonmagnetic high-conductivity layer and the second ferromagnetic layer have a film thickness so that wave asymmetry, (V1-V2)/(V1+V2), is in the range of negative 0.1 and positive 0.1, in which V1 is the peak value of reproduction output in a positive magnetic field signal and V2 is the peak value of reproduction output in a negative magnetic field signal.

5. The magnetoresistance effect element of claim 1, wherein the first ferromagnetic layer responses to a magnetic field Hin of interlayer coupling between the first and second ferromagnetic layers, a stray magnetic field Hpin of second ferromagnetic layer, and a current magnetic field Hcu of electric current applied to the first ferromagnetic layer, and sum of Hpin, Hin, and Hcu is substantially zero in center of film thickness of the first ferromagnetic layer.

6. The magnetoresistance effect element of claim 1, wherein the second ferromagnetic film is disposed adjacent to the

nonmagnetic spacer layer via the first ferromagnetic film, the nonmagnetic high-conductivity layer has a film thickness t (HCL) in terms of copper (Cu) layer of specific resistance 10 microohm centimeter,

the first and second ferromagnetic films have a magnetic film thickness tm (pin1) and tm (pin2), respectively, in terms of saturation magnetization of 1 Tesla, and

t (HCL) , tm (pin1) and tm (pin2) satisfy conditions of 0.5 nanometers $\leq$tm (pin1)-tm (pin2)+t (HCL)$\leq$4 nanometers and t (HCL)$\geq$0.5 nanometers.

7. The magnetoresistance effect element of claim 1, wherein the nonmagnetic high-conductivity layer is formed of a material having a bulk resistivity at room temperature not larger than 10 microohm centimeter.

8. The magnetoresistance effect element of claim 1, wherein the nonmagnetic high-conductivity layer is formed of a material having a resistivity so that a substantially large number of majority carriers having a spin parallel to the magnetization direction of the first ferromagnetic layer exist in the nonmagnetic high-conductivity layer.

9. The magnetoresistance effect element of claim 1, wherein the nonmagnetic high-conductivity layer contains a metal element selected from the group consisting of copper (Cu), gold (Au), silver (Ag), ruthenium (Ru), iridium (Ir), rhenium (Re), rhodium(Rh), platinum (Pt), palladium (Pd), aluminium (Al),